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(54) Title of Device: Schedule for programming the recording of programs

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**Specification**

**1. Title of Device**

Schedule for programming the recording of programs

**2. Claim**

A schedule which programmes the recording of broadcast programs and is displayed on a screen, and in which the timeline for each day extends over the boundary designated

for date change in clock time and is linked to part of the following day.

### 3 Detailed Description

(Purpose of Device)

(Field of Industrial Use)

The device relates to programming devices suitable for programming the recording of broadcast programs, and concerns a schedule for programming the recording of programs which as well as making it easy to check programmed times, simplifies the programming operation where the broadcast time of a program extends from one day to the next.

(Prior Art)

The conventional method of programming the recording of broadcast programs using a magnetic recording and playback device such as a VTR is to program a 4-digit digital time display device linked to a timer with start and finish times for recording which match the broadcast time for the program to be recorded. However, with this kind of digital display the programming process involves a complex programming operation and results in the many mistakes. There is also

difficulty that it is not in fact possible to confirm whether the programming has been done or not. For this reason, there is the disadvantage that different times can be programmed in which overlap with one another.

There is also a method of programming which employs the television screen. With this method of programming a schedule is displayed on the screen, and a bar is superimposed on the display using a light pen or a keypad to enter the times to be programmed. The bar display is equivalent to the setting of the programming time and finish time in the above described digital display method.

With this method of using the screen, the timer may either follow the normal 24-hour cycle of clock time, or run on a 12-hour cycle. In other words, in the case of a 24-hour time for example, the operation is set to repeat on a cycle which starts at 0 am in the morning and completes at 12 pm midnight. The programming schedule is created on the basis of this timer operation.

Fig. 3 shows an example of a programming schedule. In Fig. 3, the vertical axis is a timeline, and the 24-hour period is divided into two sections from 0.00 to 12.00 to clearly separate the am and pm periods. The horizontal axis indicates the days of a week.

However, with this kind of analog image, the bar is broken in the case of the bar shown at 1 and the bar shown at 2 due to the change of date and the change from am to pm, with the difficulty that the display of the programmed time is not clear. It should be noted that No. 1 programmes a broadcast which runs from 11.30 in the morning to 1.30 in the afternoon, with No. 2 programming a broadcast running from 10.00 in the morning to 1.00 in the afternoon, and No. 3 programming a broadcast from 8.15 to 8.30 from Monday through Saturday.

Moreover, a further disadvantage of programming with this bar system is that it is difficult to set a precise time.

(Difficulties to Be Resolved by the Device)

Conventional devices for programming the recording of programmes which display a programming schedule on the screen using a calendar system suffer from the difficulty that the bar breaks where the programmed time extends from morning to afternoon, or switches between days, and when trying to check the programming the user is liable to think that two separate programs have been programmed, making it difficult to tell whether there is an overlap in the programming.

The device resolves said difficulty, having as its purpose the provision of a device for programming the recording of programs which is easy to operate and which makes it easy to check the programming.

(Structure of the Device)

(Means of Resolving the Difficulties)

The device is a schedule which programmes the recording of broadcast programs and is displayed on a screen, and in which the timeline for a day is set not on the standard clock time cycle of 0 am to 12 pm, but is linked to part of the following day.

(Action)

When displaying a schedule on the screen with a calendar system to program the recording, the display of the programmed time is divided into two parts when wishing to record a program whose broadcast time crosses the boundary between separate days or between morning and afternoon. With the device, the timeline for a particular day is linked to part of the following day, it being arranged that the break in the timeline occurs at a time where no broadcasts take

place, so the display of the programmed time does not overlap onto the following day.

(Embodiment)

An embodiment of the device will now be described with reference to the drawings.

Fig. 1 is an illustrative diagram showing an embodiment of a schedule for programming the recording of programs relating to the device.

In this diagram, 21 is the screen, 22 the schedule for programming the recording of programs, and 23 a message space. With schedule 22 for programming the recording of programs, the vertical axis is the date column, the horizontal axis being time, with the horizontal axis showing time divided into six-hour sections, marking each interval as "morning", afternoon", and "evening" with the time from midnight to 5.00 the following morning shown as "next day".

Message space 23 is provided with program numbers (1)-(4), allowing programming of four channels to take place. After each number, a sample display is provided which shows the colour of the bar superimposed on the display in the schedule. For example, program number (1) corresponds to bar

17, programming the recording of a program broadcast on Tuesday from 11.30 pm to 1.30 the following day on Channel 8 in EP mode (economy mode). Program number (2) programs the recording of a program broadcast every day from Monday through Saturday from 8.15 am to 8.30 am on Channel 1 in SP mode (standard mode) (and corresponds to bar graph 18). Program number (4) indicates the content of bar 19 and is displayed as described above. Nothing has yet been programmed for program number (3).

With said schedule for programming the recording of programs, the programming indicated by bar 17 corresponds to the programming indicated by bar 1 in Fig. 3. The display of bar 1 in Fig. 3 runs across Tuesday and Wednesday, but bar 17 is continuous in Fig. 1, clearly showing the programmed times for the program, and as the display color is different for each program, it is easy to tell the difference between the programs.

The display means for the screen is shown in the block circuit diagram in Fig. 2. With the structure of Fig. 2 a signal from input device 11 such as a light pen or a keyboard is input to control circuit 12, the output of this control circuit 12 controlling image output device 13. Control circuit 12 has a timer 14 which operates on a 24-hour time cycle following said schedule 22 for programming the

recording of programs, and processes programming data from input device 11 relating to recording mode, channel and recording time. It is arranged that recording time data are set in timer 14 as well as being displayed in message space 23. At the same time image output device 13 displays signals from image memory 16 on CRT 15. Image memory 16 can generate the programming schedule and various textual and graphic data based on data input from input device 11, and bar data where the input is time data.

Thus with this embodiment, as it is arranged that the break in the timeline between days occurs at a time where there are no broadcasts, bars showing the programmed times are displayed continuously whatever the time slot of the program being programmed.

It should be noted that the above embodiment is just one example, as the timeline shown in Fig. 3 may be provided on the vertical axis, with the dateline on the horizontal axis for example. Moreover, in the embodiment a schedule for one week has been used, but the same principle applies if the programming schedule is for two weeks or one month. Furthermore, the schedule in the embodiment has been set to start the day at 5.00 am and end at 5.00 am the following day, but it may of course be set to run from 6.00 am to 6.00 am the following day.



(Effect of the Invention)

According to the device as described above, as the break in the display is set to occur at a time when no broadcasts are being made, it is easy to check on what programming has been set, with the effect that it is easy to make a check for each program.

#### 4. Brief Description of the Drawings

Fig. 1 is a diagram illustrating an embodiment of the schedule for programming the recording of programs of the device. Fig. 2 is a block circuit diagram illustrating a means of displaying the schedule shown in Fig. 1 on the screen. Fig. 3 is a diagram illustrating a schedule for programming the recording of programs in prior art.

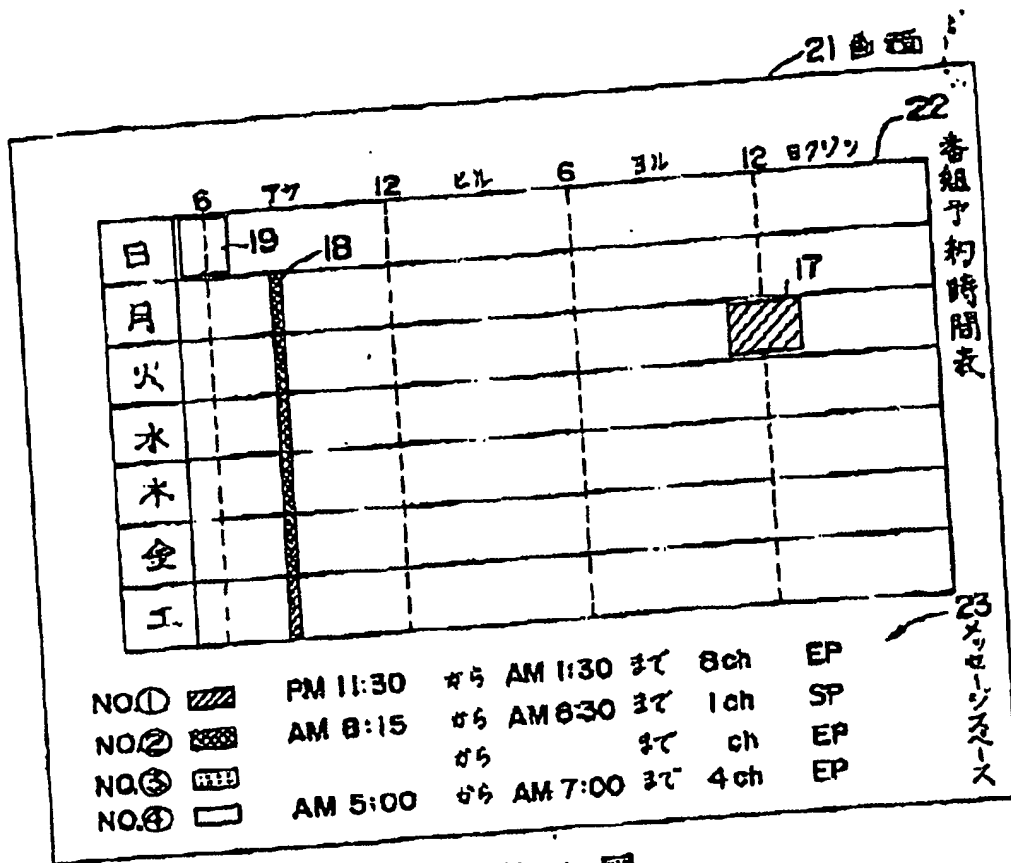
17-19 ... bars

21 ... screen

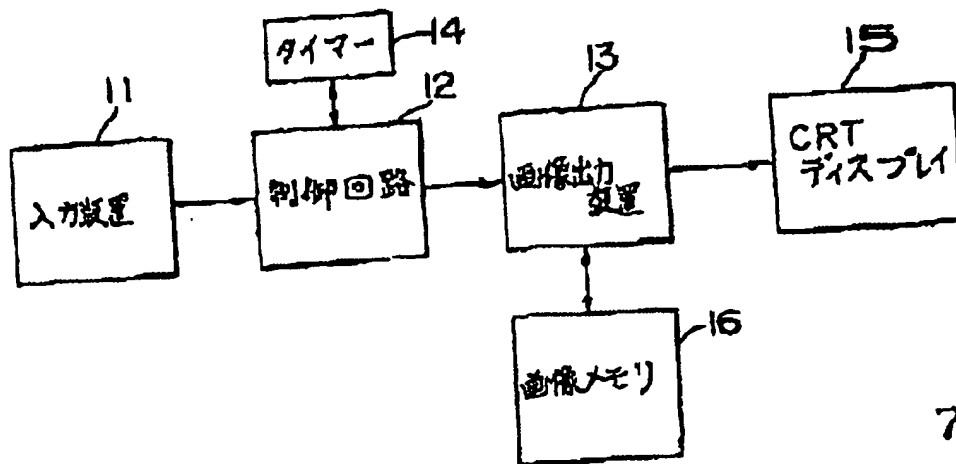
22 ... schedule for programming the recording of programs

23 ... message space

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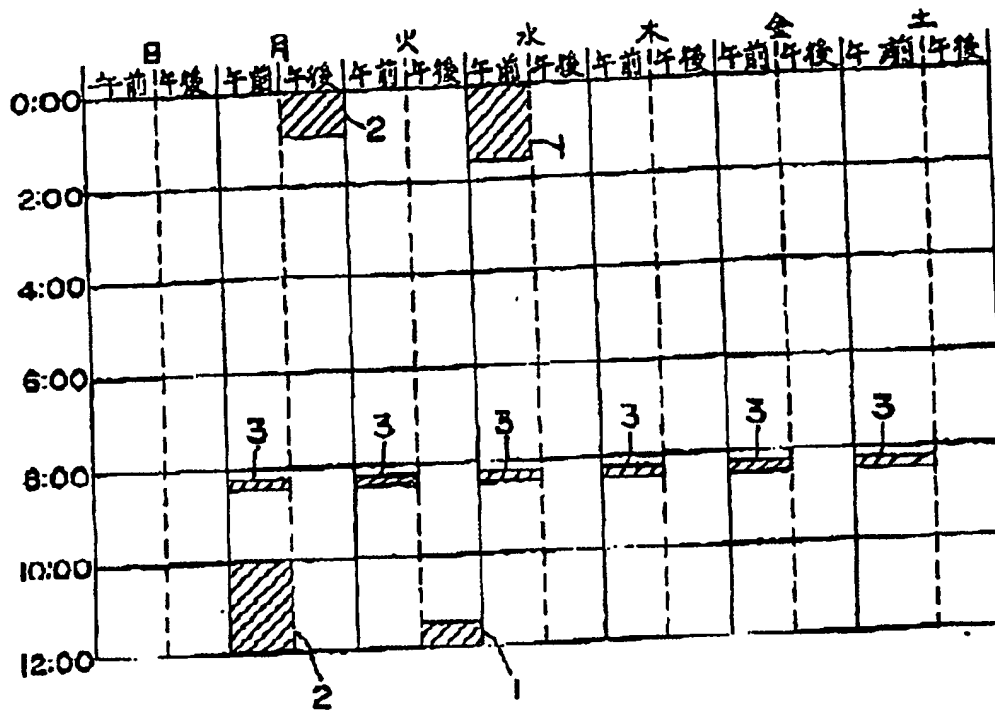


第 1 図



第 2 図

7411  
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第 3 図

Key to Figures:

Fig. 1

21 ... screen

22 ... schedule for programming the recording of programs

23 ... message space

Top of graph: 6 morning 12 afternoon 6 evening 12  
next day

Bottom of graph: From PM 11:30 to AM 1:30 (etc)

Fig. 2

11 ... input device  
12 ... control circuit  
13 ... image output device  
14 ... timer  
15 ... CRT display  
16 ... image memory

Fig. 3

Top of graph, each group of two columns: Sun Mon Tue Wed  
Thu Fri Sat Sun  
Each day column being divided by the dotted line into: am /  
pm